

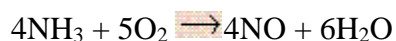
Oxidation Numbers & Balancing Redox Equations

Choose one correct answer:

1. Determine the oxidation number of carbon in K_2CO_3 .

- (a) 0
- (b) +2
- (c) +4
- (d) -2
- (e) none of the above

2. Consider the following reaction:



The element being oxidized and the oxidizing agent are:

- (a) N and NH_3
- (b) N and O_2
- (c) O and NH_3
- (d) O and O_2
- (e) H and NH_3

3. What is the oxidation number for carbon in CaC_2O_4 ?

- (a) 0
- (b) +2
- (c) +3
- (d) +4
- (e) +6

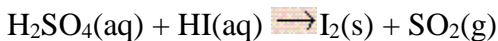
4. What is the oxidation number of molybdenum (Mo) in K_2MoO_4 ?

- a) +8
- b) +6
- c) +4
- d) +7

5. What is the oxidation number of N in $\text{Ca}(\text{NO}_3)_2$?

- a) +1
- b) +3
- c) +5
- d) +7

6. Balance the following redox reaction in acidic medium. What is the sum of the coefficients? Don't forget coefficients of one.



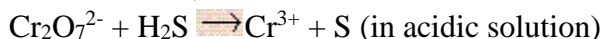
- (a) 7
- (b) 9
- (c) 11
- (d) 13
- (e) 5

7. Balance the following redox equation in acidic solution. What is the sum of all the coefficients? (Do not forget coefficients of one.)



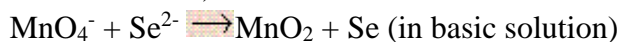
- (a) 9
- (b) 10
- (c) 11
- (d) 12
- (e) 13

8. When the following equation is balanced with the smallest possible set of integers, what is the sum of all the coefficients? (Do not forget coefficients of one.)



- (a) 13
- (b) 24
- (c) 19
- (d) 7
- (e) 29

9. When the following equation is balanced with the smallest possible set of integers, what is the sum of all the coefficients? (Do not forget coefficients of one.)



- (a) 20
- (b) 22
- (c) 24
- (d) 26
- (e) 28

10. Balance the following redox equations in basic solution, showing the half reactions in each case:

- a) $\text{CO} + \text{I}_2\text{O}_5 \longrightarrow \text{CO}_2 + \text{I}_2$
- b) $\text{NiO}_2 + 2 \text{H}_2\text{O} + \text{Fe} \longrightarrow \text{Ni}(\text{OH})_2 + \text{Fe}(\text{OH})_2$
- c) $\text{CO}_2 + 2 \text{NH}_2\text{OH} \longrightarrow \text{CO} + \text{N}_2 + 3 \text{H}_2\text{O}$